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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LY, ANH VU H

ART UNIT

PAPER NUMBER

2616

MAIL DATE

DELIVERY MODE

07/12/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/203,853

Applicant(s)

WIGGINS ET AL.

Examiner

Anh-Vu H. Ly

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 85-144 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 85-94,96-110,112-126,128-140 and 142-144 is/are rejected.
- 7) ☒ Claim(s) 95,111,127 and 141 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 25, 2007 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 85-91, 93, 98-99, 101-107, 109, 114-115, 117-123, 125, 130-137, 139, and 144 are rejected under 35 U.S.C. 102(e) as being anticipated by Russell et al (US Patent No. 6,496,519 B1). Hereinafter, referred to as Russell.

With respect to claims 85, 101, 117, and 131, Russell discloses a method of controlling a flow of frame based data (Fig. 2) comprising the steps of:

receiving frame based data at a synchronous digital network multiplexer (Fig. 2, receiving Ethernet data frames) providing an interface (Fig. 2) between a wide area synchronous digital network (Fig. 1, synchronous digital network includes terminal multiplexers 100 and 101 connected to each other by an optical fiber communications link 102) and a local area network

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(Fig. 1, local area network includes routers 103 and 104 connected to work stations 105 and 106) at a first rate of data transmission of said local area network (Fig. 2, received Ethernet data frames having a data rate of 10Mbps, 100Mbps, etc...), said data being for transmission over said wide area synchronous digital network (Fig. 1, synchronous digital network 102), said multiplexer configured to map frame based data into synchronous digital network virtual containers (Fig. 2, SDH/SONET payload mapper for mapping Ethernet frames into a set of virtual containers); and

at said multiplexer:

storing said data in a buffer (col. 8, lines 2-3 and Fig. 2, Ethernet data frames are stored in rate adaption means 203);

monitoring an amount of said data stored in said buffer with respect to a data amount threshold level for said buffer; determining that said amount is greater than said threshold level; and in response to said step of determining, generating a signal for adapting said first rate to a second rate of data transmission of said local area network, said second rate being lower than said first rate; and using said generating signal to adapt the data transmission rate of the local area network from the first rate to the second rate (col. 8, lines 3-9, if the buffer stores within rate adaption means 203 become overloaded, the rate adaption means initiates a flow control by sending signals back to the Ethernet frame switch to delay sending a further Ethernet frame until the buffer in the rate adaption means has sufficient capacity to accept new Ethernet data frames. Herein, the buffer must be monitored and compared to a threshold in determining that it is overloaded. Further, delaying in sending a further Ethernet frame means that the new rate is reduced and lower than the original transmitted rate).

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With respect to claims 86, 102, 118, and 132, Russell discloses that wherein said synchronous digital network comprises a synchronous digital hierarchy (SDH) network (col. 6, line 10).

With respect to claim 87, 103, 119, and 133, Russell discloses that wherein said synchronous digital network comprises a SONET network (col. 6, line 11).

With respect to claims 88-89, 104-105, 120-121, and 134-135, Russell discloses that wherein said data is received from an Ethernet network and said data is Ethernet data (col. 6, line 58).

With respect to claims 90, 106, 122, and 136, Russell discloses that wherein said signal comprises a pause frame (col. 8, lines 3-9, flow control signals for delaying data rate is pause frame signals).

With respect to claims 91, 107, 123, and 137, Russell discloses that wherein said data is received from an Ethernet network (col. 6, line 58) and said pause frame is an Ethernet pause frame (col. 8, lines 3-9, flow control signals for delaying data rate is Ethernet pause frame signals).

With respect to claims 93, 109, 125, and 139, Russell discloses that wherein said buffer comprises data storage locations for storing at least one data frame (col. 8, lines 2-3, Ethernet

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data frames are stored in rate adaption means 203. Herein, the buffer holds at least one Ethernet data frame).

With respect to claims 98, 114, 130, and 144, Russell discloses sending generated signal over said interface (Fig. 1, flow control signals are sent back to router 103 or 104 from multiplexer 100).

With respect to claims 99 and 115, Russell discloses that wherein said step of sending is performed substantially immediately after said step of determining (col. 8, lines 3-9, if the buffer stores within rate adaption means 203 become overloaded, the rate adaption means initiates a flow control by sending signals back to the Ethernet frame switch to delay sending a further Ethernet frame until the buffer in the rate adaption means has sufficient capacity to accept new Ethernet data frames. Herein, flow control signals are sent immediately after determining that buffer is overloaded).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. Claims 92, 96, 100, 108, 112, 116, 124, 128, 138, and 142 are rejected under 35 U.S.C. 103(a) as being unpatentable over Russell in view of Ramakrishnan (US Patent No. 6,167,029). Hereinafter, referred to as Russell and Ramakrishnan.

With respect to claims 92, 108, 124, and 138, Russell discloses sending flow control signals back to Ethernet switch to reduce data rate (col. 8, lines 3-9). Russell does not disclose that wherein said pause frame specifies a time interval for inhibiting further transmissions from said Ethernet network. Ramakrishnan discloses that wherein said pause frame specifies a time interval for inhibiting further transmissions from said Ethernet network (col. 9, lines 64-66). It would have been obvious to one having ordinary skilled in the art at the time the invention was made to specify an inhibited time interval in Russell's system, as suggested by Ramakrishnan, to ensure that the buffer has sufficient capacity to accept new Ethernet data frames.

With respect to claims 96, 112, 128, and 142, Russell discloses storing Ethernet data frames in a buffer (col. 8, lines 2-3). Russell does not disclose that wherein the buffer is configured as a FIFO queue. Ramakrishnan discloses that wherein said buffer is configured as FIFO queue (col. 7, line 18). It would have been obvious to one having ordinary skilled in the art at the time the invention was made to include FIFO buffer in Russell's system, as suggested by Ramakrishnan, to ensure that first received Ethernet data frame is the first frame to get processed.

With respect to claims 100 and 116, Russell discloses that flow control signals are sent after determining that the buffer is overloaded (col. 8, lines 3-9). Russell does not disclose

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sending is performed upon completing transmission of a data frame currently being transmitted at said interface. Ramakrishnan discloses that wherein said step of sending is performed upon completing transmission of a data frame currently being transmitted at said interface (col. 9, lines 22-28). It would have been obvious to one having ordinary skilled in the art at the time the invention was made to send flow control signals after transmitting a complete data frame in Russell's system, as suggested by Ramakrishnan, therefore the transmitted data frame is not corrupted.

4. Claims 94, 97, 110, 113, 126, 129, 140, and 143 are rejected under 35 U.S.C. 103(a) as being unpatentable over Russell.

With respect to claims 94, 110, 126, and 140, Russell discloses that Ethernet data frames are stored in rate adaption means 203 (col. 8, lines 2-3). Russell does not disclose that the buffer has size equal to a number of maximum length Ethernet frames, wherein the number being selectable from a set comprising 4 and 6. However, four Ethernet frame or six Ethernet frames can be chosen as a matter of choice. Therefore, it would have been obvious to one having ordinary skilled in the art at the time the invention was made to select either four or six Ethernet frames for storing in the buffer in Russell's system, to reduce latency.

With respect to claims 97, 113, 129, and 143, Russell discloses storing Ethernet data frames in a buffer (col. 8, lines 2-3). Russell does not disclose that wherein the buffer is configured as a circular buffer. However, circular buffer is well known in the art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was

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made to have circular buffer in Russell's system, since circular buffer including pointers for pointing to next data object in the buffer and length value that specifies how many objects are currently in the buffer.

Allowable Subject Matter

5. Claims 95, 111, 127, and 141 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments with respect to claims 85-144 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Russell et al (US Patent No. 6,917,630 B1) discloses concatenation of containers in synchronous digital hierarchy network.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh-Vu H. Ly whose telephone number is 571-272-3175. The examiner can normally be reached on Monday-Friday 7:00am - 4:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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